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Pancreas transplantation in patient with long-standing diabetes mellitus

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LETTER TO THE EDITOR

Pancreas transplantation in patient with long-standing diabetes mellitus: How to judge fitness for transplant?

With great interest, we read the recent article by Rohan and colleagues, focusing on the possible challenges of long-standing diabetes prior to pancreas transplantation.¹ This retrospective cohort analysis, comprising of 13-years of pancreas transplantation at a single institution, included 137 pancreas transplant recipients with type 1 DM or type 2 DM. The authors conclude that this study did not find worse clinical outcomes of pancreas transplantation in patients with DM > 25 years, compared to patients with DM < 25 years.

The results presented in this article are of significant interest since the number of patients on the waiting list increases and the number of pancreas transplantations declines, as highlighted in a recent publication from our group.² However, the authors did not elaborate on an important issue concerning the difference between the two DM types, which should be addressed to fully understand the clinical impact of their study.

This issue concerns the difference in disease progression between patients with type 1 DM and type 2 DM, or better referred to as type 1 DM and C-peptide positive DM. As highlighted by de Ferranti et al, in a joined scientific statement by the American Heart Association and American Diabetes Association, management approaches to reduction of cardiovascular disease (CVD) in type 1 DM have been extrapolated in large part from experience in C-peptide positive DM, failing to recognize important differences in the underlying pathophysiology.³ In type 1 DM patients, CVD events occur after approximately two decades of disease duration, while in C-peptide positive DM progression of CVD occurs within 6 years.⁴⁻⁶ As addressed by Rohan and colleagues, their subgroup of patients with DM > 25 years comprised of more type 1 DM patients than the subgroup with DM ≤ 25 years. With the above-stated in mind, the relatively good patient outcomes in the DM > 25 years group can possibly be explained by a slower progression of CVD in patients with type 1 DM. As a possible consequence, one can hypothesize that the duration of DM is more important in patients with C-peptide positive DM than in type 1 DM patients.

With the current strict criteria for C-peptide positive pancreas transplant recipients, namely strict age limits, carefully selected BMI ranges, low insulin dependency and minimal comorbidities, transplant outcomes are comparable to those of type 1 DM patients. However, the literature does not provide information with regard to the CVD progression in patients who are currently not selected for pancreas transplantation. There are increasing efforts to minimize these selection criteria, based on studies with favorable

outcomes for pancreas transplantation in extended-criteria recipients.⁷ When lowering the bar for pancreas transplantation, one should keep in mind that adequate use of pre-transplant assessment algorithms is essential, especially when considering CVD in type 1 DM recipients.


With this letter, we advocate for an increase of research activities within the field of pancreas transplantation, with a need for multicenter, international studies, focusing on CVD in C-peptide positive and type 1 DM pancreas transplant recipients. These future studies will provide a more concise answer on the pending questions with regard to the difference in CVD progression between the two types of DM, providing better opportunities for pancreas transplant recipient selection and disease management.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

AUTHORS' CONTRIBUTIONS

Stan Benjamins and Robert A. Pol initiated and wrote this letter to the editor.

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